

Claims

1. A silica glass jig for semiconductor industry, characterized by having on the surface of the above-described jig, pyramidal projected structures with their cut-off apices and concave portions therebetween, and small projections are uniformly distributed thereon.
2. A silica glass jig for semiconductor industry described in Claim 1, characterized in that, on the surface thereof, the concave portions are dimpled and each having a width of from 20 to 300 μm , and there are grooves each having a width of from 0.5 to 50 μm at an interval of from 20 to 300 μm , and between the grooves and in the grooves, small projections each having a width of from 1 to 50 μm and a height of from 0.1 to 10 μm are uniformly distributed.
3. A silica glass jig for semiconductor industry described in Claim 1 or 2, wherein the maximum width of the bottom portions of the pyramidal projected structures with their cut-off apices is from 70 to 1000 μm and a height from the bottom portions to the top portions of the projected structures is from 10 to 100 μm , and the maximum width of the bottom portions of the small projections uniformly distributed on the protruded structures is from 1 to 50 μm and the height thereof from the bottom portions to the top portions is from 0.1 to 10 μm .
4. A silica glass jig for semiconductor industry described in one of the preceeding Claim 1 to 3, wherein the average roughness Ra of the silica glass jig for semiconductor industry is in a range of from 1 to 10 μm .
5. A method for producing a silica glass jig for semiconductor industry, characterized by machining the surface of the silica glass jig to form irregularities, and then treating the resulting surface with a treating solution containing hydrogen fluoride and ammonium fluoride.

6. A method for producing a silica glass jig for semiconductor industry described in Claim 5, wherein the treating solution further contains an organic carboxylic acid.
7. A method for producing a silica glass jig for semiconductor industry described in Claims 6, wherein the organic carboxylic acid is acetic acid
- 8.. A method for producing a silica glass jig for semiconductor industry described in Claim 5, wherein the machining is a sandblasting treatment.
9. A method for producing a silica glass jig for semiconductor industry described in preceeding Claims 5 to 7, wherein the treating solution contains from 10 to 30 % by mass of hydrogen fluoride, from 5 to 30 % by mass of ammonium fluoride, from 45 to 70 % by mass of an organic carboxylic acid, and rest being water.
10. A method for producing a silica glass jig for semiconductor industry by immersing the silica glass jig in a first processing solution containing hydrogen fluoride, ammonium fluoride, and an organic acid, and then immersing it at least once in a second processing solution, wherein the content of the organic acid is higher than that of the first processing solution.
11. A method for producing a silica glass jig for semiconductor industry, described in Claim 10, wherein the first processing solution is an aqueous solution containing from 15 to 50 % by mass of hydrogen fluoride, from 6 to 30 % by mass of ammonium fluoride, and from 30 to 50 % by mass of an organic acid, and the second processing solution is a processing solution containing from 5 to 20 % by mass of hydrogen fluoride, from 6 to 30 % by mass of ammonium fluoride, and from 40 to 70 % by mass of the organic acid.
12. A method for producing a silica glass jig for semiconductor industry described in Claim 11, wherein the organic acid is acetic acid